Research Project: Activity

Targeted *Standard Course of Study* Goals and Objectives:

Goal 1: The learner will develop abilities necessary to do and understand scientific inquiry.

Essential Question(s):

What is the significance of scientific investigation?

How does a scientist design and perform an inquiry-based scientific investigation considering controls, variables, and data analysis?

What is the relationship between an independent variable and a dependent variable?

What is the importance of having a control in a scientific investigation?

How do you distinguish between an observation and an inference?

What are some potential hazards that can occur in a lab?

What is the difference between quantitative and qualitative data? When would you use one over another?

Introduction:

This research project was developed with several objectives in mind. As a scientist you question things that are going on around you and the best way to get an answer is to design and conduct an experiment. You also need to develop and practice your skills of observation, analysis and communication. This project will provide the opportunity for you to practice what a scientist does on the job. Your experience with research will help you in your other high school and college lab classes.

Deadlines:
This assignment is ***not*** to be completed in one evening. In order to do a good job with this assignment you will need to start early and not procrastinate. Think of this as an English term paper that is combined with a Biology lab activity. You need to complete sufficient background research before you can design your experiment. Then you need to set aside enough time to conduct your experiment ***at least*** one time. As you are designing your project schedule be realistic with your previous time commitments. After your experiment is finished you then need time to analyze your results so that you can communicate your findings and conclusions.

Basic outline of your Biology Research Project:

1. Topic selection & approval
2. Identify & confirm components that need to be researched
3. Thoroughly research the above components & use the information to make a hypothesis.
4. Completion of a typed Introduction Paper.
5. Designing your experiment.